

# Home Water Supply

46% of NH Population Served by Private Wells

520,000 People Served by 250,000 Wells

## Basic Facts a Homeowner Needs to Know

- 1) What Type of Well?
- 2) How Much Water?
- 3) Is the Water Safe to Drink?

# Well Database

No. Records in Well Database	124,500
Wells Constructed Annually in NH	2,000 to 6,000
Wells Constructed in 2015	2,000+

<u>Well Type</u>	<u>% Total Wells</u>
1) Drilled in Bedrock	95
2) Constructed in Sand and Gravel	4
3) Dug Wells Constructed by Excavation	< 1

	Median Depth (ft)	Median Yield (gpm)	Deepest Well (ft)
Bedrock Wells	320	8	2,500
Windham Wells	405	10	2,500

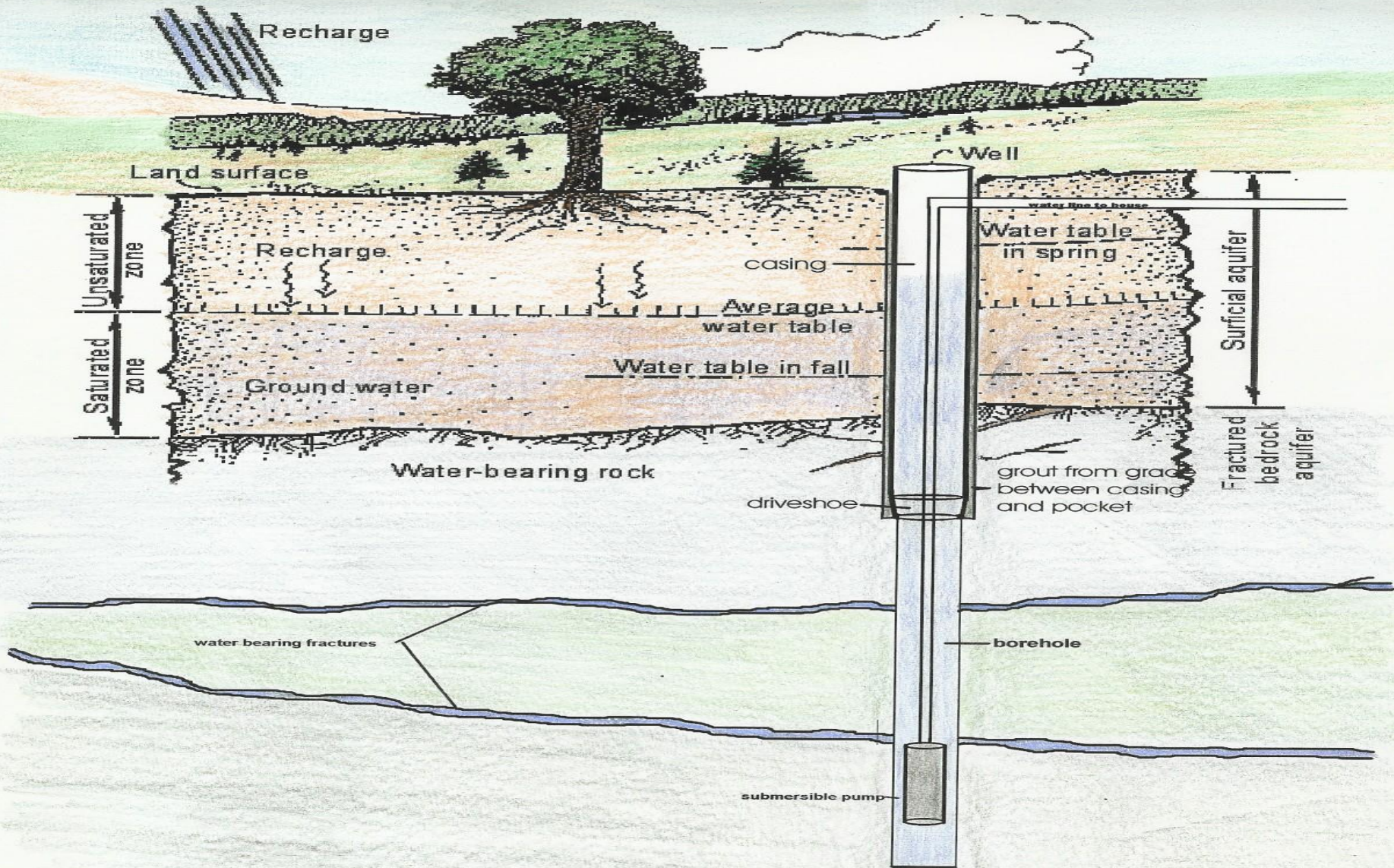
No. Wells w/Depths Ranging from 1,000 to 2,500 ft	1,600+
Windham Well Depths from 1,000 to 2,500 ft	221

# Fractured Bedrock Aquifer





# Bedrock Well Construction





# Air Rotary Drilling





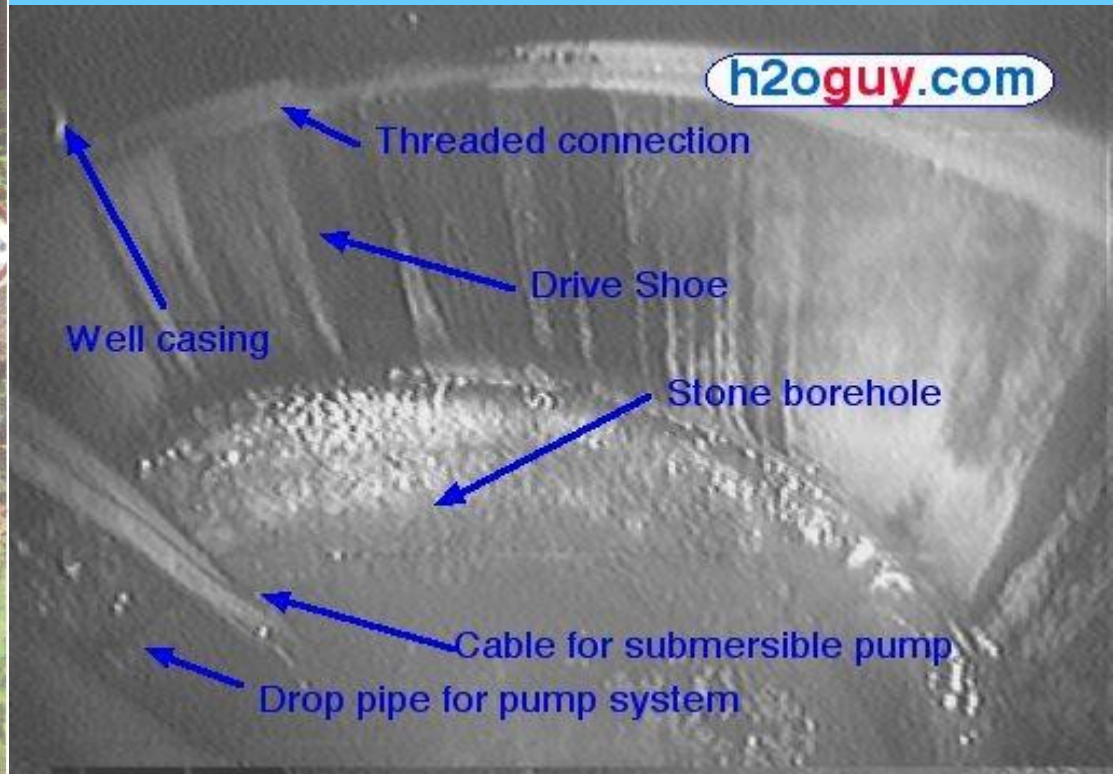
# Cable Tool Drilling





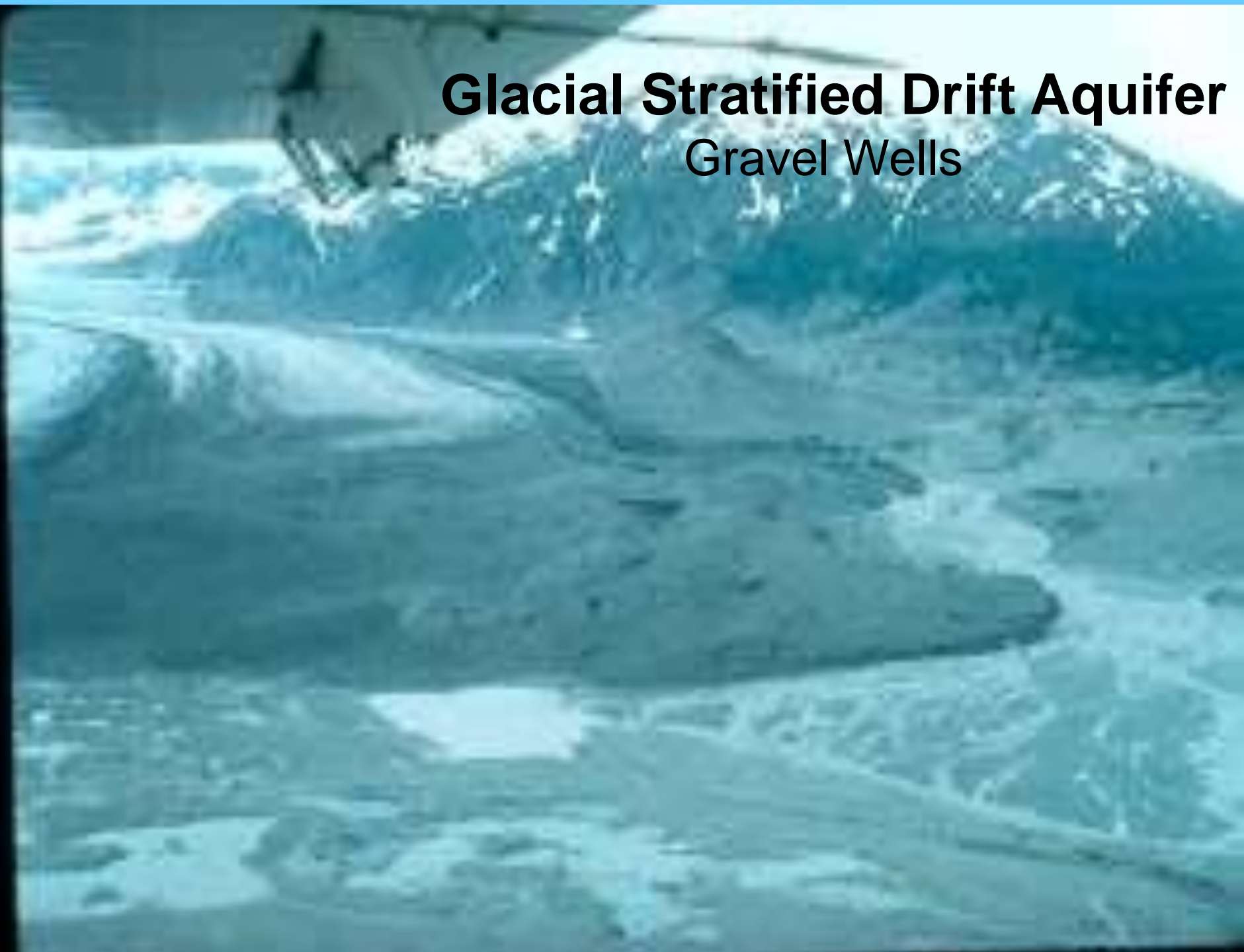
# Setting Casing

- ✓ Minimum Depth - 20 feet
- ✓ 10 feet into Competent Bedrock
- ✓ Driveshoe Required
- ✓ Sealed to Bedrock



# Glacial Stratified Drift Aquifer

## Gravel Wells





# Dug Wells















# Compressed Air Test



# **No State Requirement for Minimum Well Yield**

## **Recommended Minimum Capacity**

**600 Gallons within a 2 Hour Period at Least  
Once Per Day**

**Equal to:**

**5 Gallons Per Minute for 2 Hours**



# Minimum Capacity Table

Supply 600 Gallons in 2 Hours

Sustained Well Yield [gpm]	Required Well Depth [ft]
0.5	400
1	360
1.5	320
2	280
2.5	240
3	200
3.5	160
4	120
4.5	80
5	---



# Well Yields for Domestic Bedrock Wells

Yield Range [gpm]	Statewide Percent of Total	Town of Windham Percent of Total
Greater than 5	60%	62%
Between 2.1 and 5	30%	19%
Between 0.5 and 2	9%	14%
Less than 0.5	1%	5%



# Hydro-Fracturing





# Hydraulic Pressure



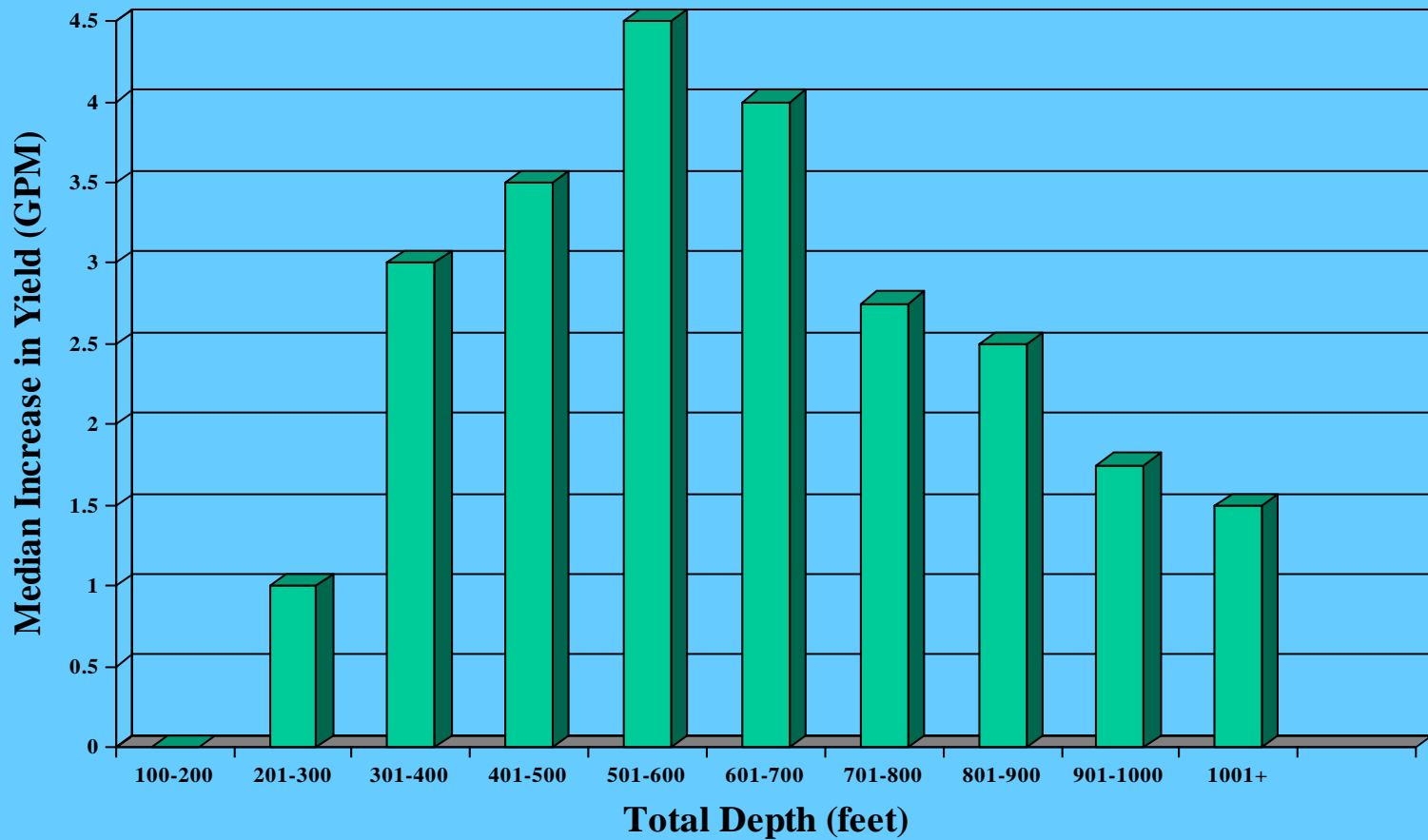


# **Water Bearing Fracture After Development**



# Median Increases in Yield following Hydrofracturing – February 2001

## Based on 1,089 wells





# Wellhead Protection



**8 to 12 Inches Above Ground**

**Sealed Cover**

**Screened Vent**

**Electrical Conduit Secured to Cover**

**Submersible Pump Ground Wire Bonded to Casing**



# Wire Connections & Grounding

- ✓ Submersible pump motors grounded and bonded to well casings.
- ✓ Wire connections must be water tight.  
Exception: Grounding conductor
- Wire nuts prohibited





# Common Non-Compliant Cover





# Electrical Conduit Not Secured









Busted!





**Artesian Well  
w/ Caulking Seal?  
No Electrical Conduit?**





**Duct Tape!**





# Dug Well with Access Plug









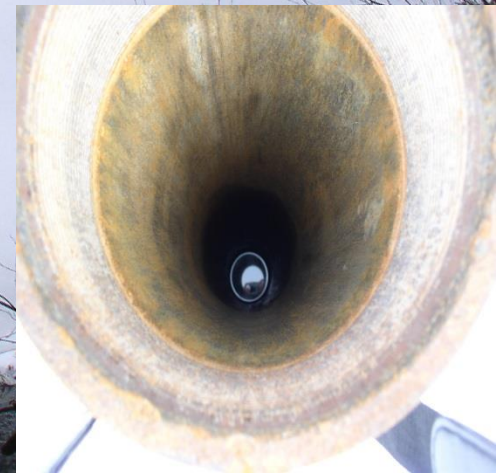


01/02/2013





No  
Cover





# Gruesome Discovery





# Well Pits





# Well Information

Well Construction Details on the Web

<http://des.nh.gov>

Look for

OneStop Data and Information



Or Call

NH Geological Survey at 271-1976

or

**Drinking Water and Groundwater Bureau at 271-3209**